data covering the period between January 2000 and December 2005. The outcome variables captured cost of readmissions for a CVD-related condition following an index CVD-related admission. The covariate of interest was an indicator variable for a discharge AMA in the index hospitalization. The difference in the cost of readmissions (at 7-, 31-, 180-, and 365- day intervals) following formal discharges and discharges AMA was examined using Heckman sample selection models and log linear models. The Heckman sample selection model was found to provide a better representation of the data generation process. **RESULTS:** The sample included 443,049 patients, of which 24,823 (5.6%) were readmitted to the same hospital. Approximately 1% of the patients who were readmitted to the hospital during the study period left AMA on the index admission while 0.87% of those who were not readmitted left AMA ($p < 0.001$). The cost of the first readmission within 180 days was 9% ($p = 0.03$) higher for patients discharged AMA on index admission compared to those who were discharged formally. The cost of all readmissions within 180 days and 365 days were 10% ($p = 0.02$) and 9% ($p = 0.02$) higher for patients discharged AMA on index admission compared to those who were discharged formally. **CONCLUSIONS:** A self-discharge AMA among patients admitted for CVD is associated with higher readmissions costs when readmissions occur within 6 months or 1 year.

PCV67

EXPLORATORIES COST-CONSEQUENCE AND BUDGET IMPACT ANALYSIS OF SIROLIMUS-ELUTING STENT VS. ZOTAROLIMUS-ELUTING STENT FOCUSED ON THE RESTENOSIS AFTER DRUG-ELUTING STENT PLACEMENT UNDER THE PERSPECTIVE OF A BRAZILIAN PRIVATE PAYER

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OBJECTIVES: To identify the differences in the number of restenosis after the placement of sirolimus-eluting stent vs. zotarolimus-eluting stent and measure their related costs. **METHODS:** A literature review was conducted to identify meta-analysis or randomized clinical trials (RCT) that compared sirolimus-eluting (SES) and zotarolimus-eluting (ZES) stents. The clinical outcome of interest was angiographic restenosis after stent placement given that this is a surrogate ending point that may predict late mortality. The results of the SORT OUT III trial with 2,333 patients were used which demonstrated that SES offered a lower rate of restenosis vs ZES (0.25% vs 1.25%) (HR: 4.62; 95 CI, 1.33–16.1, $p = 0.02$) (Lassen, 2008). The perspective is from a private payer in Brazil. Local guidelines for economic evaluation of health care technologies were followed (Vianna, 2007). A decision model was built in Excel. Resource usage was raised in a panel with hospitals and valued by micro-costing based on public sources (CBHPM 5th edition, PROAHSA, Brasíndice and SIMPRO). Only direct costs were considered and reported in 2010 Brazilian Reais (USD1 = R$1.75). Discount rate was not applied given the 1-year horizon of the study. A 500,000 cohort was taken for a revascularization incidence of 932/100,000 (Ryen, 2009). A one-way sensitivity analyses was performed. **RESULTS:** Based on our model SES patients had fewer cases of restenosis vs ZES (12 vs 58).Total cost for the SES group was 1.87% below the one found in the ZES group (R$ 29,008 vs R$ 29,559). **CONCLUSIONS:** Results suggest SES patients had a risk reduction of restenosis compared with ZES patients. Besides SES offer a 1.87% potential reduction in costs.

PCV68

COST-EFFECTIVENESS OF GENOTYPE-DRIVEN ANTIPLATELET THERAPY FOR SECONDARY PREVENTION AFTER ACUTE CORONARY SYNDROME

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OBJECTIVES: Clopidogrel's effectiveness is reduced significantly for secondary prevention of thrombotic events after acute coronary syndrome (ACS) in patients with CYP2C19*2 mutations. Ticagrelor, a novel antiplatelet agent, does not require activation by the CYP2C19 enzyme and was superior to clopidogrel in a recent secondary prevention trial. In 2011, clopidogrel will lose its patent protection and likely will be substantially less expensive than ticagrelor. We aim to determine the cost-effectiveness of genotype-driven treatment, in which ticagrelor is prescribed in the presence of CYP2C19*2 mutations and clopidogrel in their absence, compared to prescribing ticagrelor universally. **METHODS:** A hybrid decision tree/Markov model was used to derive 30-year medical costs (in 2009 US$) and outcomes for a cohort of Medicare ACS patients of age 65 receiving either a genotype-driven or ticagrelor-only treatment. Outcomes included life years and quality-adjusted life years (QALYs) gained. Data comparing the clinical performance of ticagrelor and clopidogrel were derived from the PLATO study. Mortality and repeat myocardial infarction risk were estimated using Medicare inpatient claims of ACS patients. Costs and quality adjustments were derived from literature reviews. **RESULTS:** Over a 30-year period the incremental cost-effectiveness ratio (ICER) for universal ticagrelor was $8,827 per QALY compared to genotype-driven treatment. Universal ticagrelor and genotype-driven treatment had respective per capita costs of $10,096 and $8,868. Universal ticagrelor resulted in 0.14 QALYs gained per person relative to genotype-driven treatment. The ICER was most sensitive to the price of ticagrelor and the hazard ratio for death for ticagrelor compared with clopidogrel and remained below $50,000 per QALY until a monthly price of $737 for ticagrelor or a 0.93 hazard ratio for death for ticagrelor relative to clopidogrel. In probabilistic analyses, the ICER was below $50,000 per QALY in 97.4% of simulations. **CONCLUSIONS:** Prescribing ticagrelor universally increases quality-adjusted life expectancy for ACS patients at a cost below typically accepted thresholds.

PCV69

COST-EFFECTIVENESS ANALYSIS OF THE USE OF ROSUVASTATIN IN PREVENTION OF VASCULAR EVENTS IN THE MEXICAN POPULATION BASED ON THE JUPITER STUDY

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OBJECTIVES: To assess the cost-effectiveness of rosuvastatin 20 mg for prevention of major cardiovascular disease (CVD) events and mortality compared with no treatment alternative in a higher CVD risk population based on findings from JUPITER (Justification for the Use of statins in Primary prevention: an Intervention Trial Evaluating Rosuvastatin). **METHODS:** A probabilistic Monte Carlo simulation model estimated long-term cost-effectiveness of rosuvastatin therapy (20 mg daily) for the prevention of CVD mortality and morbidity. Using outcomes data from the JUPITER trial, the relative risk reduction of rosuvastatin 20 mg compared with no treatment was carried forward beyond the trial period. Baseline CVD event risk was age adjusted using Framingham equation. Cost- effectiveness was assessed from a payer perspective using direct medical costs and a lifetime horizon. Life tables and CVD-attributable mortality risk estimates were derived from Mexican national statistics data. Results are presented in U.S. dollars (exchange rate 13 MXN/dollar). **RESULTS:** The model was run for a hypothetical cohort of 100,000 patients at higher risk of CVD events (men 61%, age 67 years, mean Framingham risk 15%). Estimated quality adjusted life years (QALYs) gained with rosuvastatin therapy compared with no treatment was 31,723 over lifetime and 23,946 over a 20-year horizon. Over lifetime, 11,680 events were avoided: 6,076 non-fatal MIs, 2,596 non-fatal strokes, and 3,729 CVD deaths. The estimated incremental cost-effectiveness ratio (ICER) for cost per QALY was $8,91 for a lifetime horizon. For a hypothetical cohort similar to the overall JUPITER population, the ICER was $11,764/QALY over lifetime. For a 20-year horizon, similar ICERs were estimated for the higher-risk ($11,327/QALY) and JUPITER patient populations ($16,279/QALY). **CONCLUSIONS:** In a higher-risk Mexican population with the mean Framingham risk of 15%, treatment with rosuvastatin 20 mg daily is a cost-effective treatment alternative if the willingness to pay per QALY is higher than $8291.

PCV70

COST-EFFECTIVENESS OF ROSUVASTATIN 20 MG IN SECONDARY-PREVENTION PATIENTS IN THE UNITED STATES

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OBJECTIVES: To assess cost-effectiveness of rosuvastatin 20 mg treatment in secondary prevention of major cardiovascular disease (CVD) events and mortality for patients with a previous CVD event. **METHODS:** A probabilistic Monte Carlo simulation model estimated long-term cost-effectiveness of rosuvastatin therapy (20 mg daily) for prevention of CVD mortality and morbidity in patients with a previous CVD event (60% men, age 61 years, mean Framingham score 25%). The relative risk reduction observed with rosuvastatin 20 mg in the JUPITER (Justification for the Use of statins in Primary prevention: an Intervention Trial Evaluating Rosuvastatin) trial was used in this secondary-prevention setting based on available literature indicating similar efficacy of statins in primary- and secondary-prevention settings. The quarterly event probabilities were used to construct survival curves for patients in both the treatment and placebo groups. The relative risk of rosuvastatin was estimated and extrapolated beyond the trial duration. The event rates were age adjusted beyond the trial duration. The difference in baseline risk between the JUPITER trial population and population of interest was adjusted using Framingham score. A payer perspective was assessed with direct medical costs and up to a lifetime horizon. **RESULTS:** For a hypothetical cohort of 100,000 patients with a previous history of CVD and 25% Framingham risk score, estimated quality-adjusted life-years (QALYS) gained with rosuvastatin therapy compared with placebo was 54,319 over lifetime, and 39,252 and 15,341 over 20-year and 10-year horizons, respectively. Rosuvastatin 20 mg avoided 14,373 events over lifetime (8,327 non-fatal MIs, 3,218 non-fatal strokes, and 4,292 CVD deaths avoided). Rosuvastatin 20 mg dominated (more effective and less costly) over lifetime and 20-year time horizon. The incremental cost-effectiveness ratio for cost per QALY over 10 years was $18,549. **CONCLUSIONS:** Results indicate rosuvastatin 20 mg to be cost-effective in secondary-prevention treatment of patients with a history of CVD events.

PCV71

COST-EFFECTIVENESS OF 123I-MIBG (ADREVIEW) IMAGING FOR PATIENT TREATMENT SELECTION IN THE PREVENTION OF SUDDEN CARDIAC DEATH

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OBJECTIVES: To evaluate the costs, benefits, and incremental cost-effectiveness of non-invasive imaging of cardiac sympathetic innervation using AdreView in patients

with chronic left ventricular dysfunction at increased risk for sudden cardiac death as compared to current risk stratification methods for selection of patients for implanted cardiac defibrillators (ICD) versus medical therapy. **METHODS:** A Markov model was developed to evaluate the impact of using AdreView for evaluating NYHA II or III heart failure (HF) patients with LV ejection fraction (EF) <50% for treatment with an ICD. AdreView risk-stratification was used to guide the treatment decision between ICD and medical therapy. The source of data for predicted probabilities, expected mortality rates, and treatment costs in year 2009 dollars are from the published literature and the AdreView Myocardial Imaging for Risk Evaluation in Heart Failure (ADMIRE-HF) study. The model was developed from a societal perspective using a one-month cycle time, 3% discount rate and a lifetime time horizon. Sensitivity analysis was completed on cost, efficacy and relative risk ratios. **RESULTS:** AdreView had an incremental cost-effectiveness ratio (ICER) of $100,910 versus standard stratification methods. The number needed to screen to prevent one death over 5 years was 20. The model was sensitive to changes in utility values ($91,737–$112,123 / QALY), efficacy of ICD in low risk patients ($95,805–$107,388 / QALY) and efficacy of ICD in high risk patients ($81,578–$166,086 / QALY). The model was not sensitive AdreView cost, even at 200% of baseline ($104,068 / QALY). **CONCLUSIONS:** AdreView is a relatively cost-effective screening strategy versus current methods that can prevent sudden cardiac deaths within as few as 20 patient screenings. Further research on the use of AdreView in real-world settings is warranted.

PCV72

COST-EFFECTIVENESS OF ROSUVASTATIN FOR THE PRIMARY PREVENTION OF VASCULAR EVENTS ACCORDING TO FRAMINGHAM RISK SCORE IN PATIENTS WITH AN ELEVATED C-REACTIVE PROTEIN

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OBJECTIVES: Compare the cost-effectiveness of rosuvastatin versus standard management according to Framingham risk for the primary prevention of vascular events in JUPITER-like patients that had LDL levels less than 130 mg/dL and CRP levels of 2.0 mg/L or higher. **METHODS:** TreeAge Pro 2009 software was used to design 2 Markov-type models from a third party payer perspective to calculate the incremental cost-effectiveness ratio (ICER) of rosuvastatin 20 mg versus standard management over 10 years in patients with a Framingham Risk Score greater than 10% and less than or equal to 10%. Cost data were obtained from CMS and the Redbook. Quality of life measures were obtained from the literature. Event data were obtained directly from the JUPITER Study Group. One-way sensitivity analysis and probabilistic sensitivity analysis were conducted on many possible ranges of cost, quality of life measures, and event rates. **RESULTS:** Treating patients with rosuvastatin to prevent vascular events would result in an estimated ICER of $37,232/QALY and $95,000/QALY in those with Framingham Risk Scores greater than 10%, and less than or equal to 10%, respectively. Results of 1-way sensitivity analysis were especially sensitive to the price of the rosuvastatin and the probability of a primary endpoint event in the standard management group. Results of a probabilistic sensitivity analysis suggest that in patients with a Framingham score greater than 10%, the probability that rosuvastatin would be considered cost-effective at a $50,000/QALY threshold is approximately 97.5%. In those patients with a Framingham Risk Score less than or equal to 10%, the probability that rosuvastatin would be considered cost-effective is less than 1%. **CONCLUSIONS:** Compared with standard management practices, statin therapy with rosuvastatin may be a cost-effective strategy over a 10-year time horizon for preventing vascular events in patients with a Framingham Risk Score greater than 10% that have normal LDL levels and elevated CRP levels.

PCV73

CONSIDERING THE COST-EFFECTIVENESS OF STATINS IN FAMILY PRACTICE IN TURKEY FROM A PAYER PERSPECTIVE

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OBJECTIVES: In Turkey, there is Atorvastatin, Fluvastatin, Pravastatin, Rosuvastatin and Simvastatin in the statin market. And all statins are reimbursed by health insurance companies.The aim of this study is to determine the cost-effective statins which are reimbursted by the Social Security Foundation,the biggest reimburestment foundation in Turkey. **METHODS:** A cost-effectiveness analysis was designed from the perspective of the insurance company view. For insurance company data; Social Security Foundation which is the biggest reinburstment foundation in Turkey was chosen. The assumed treatment protocol depended on the one in the Republic of Turkey Health Ministery Primary Care Diagnosis and Treatment Guide which was published in 2003.The values of the mean effectiveness of statins are taken from a published meta-analysis. **RESULTS:** Simvastatin had the lowest cost in the first year of therapy ($166), followed by pravastatin ($300),fluvastatin ($365),rosuvastatin($437) and atorvastatin($448). When the drugs were compared for the incremental cost-effectiveness, simvastatin dominated pravastatin and fluvastatin,whereas rosuvastatin dominated atorvastatin.The first year incremental cost of rosuvastatin was $271 compared to simvastatin, or $30 per additional 1% reduction in LDL-C, $225 per additional 1% increase in HDL-C and $1856 per additional patients to ATP II goal. **CONCLUSIONS:** Because simvastatin had a lower acquisition cost than all statins and its all dosages cost approximately 1/3 of the nearest alternative statin, in our base case and alternative scenarios simvastatin was the least costly alternative. Thus depending on actual acquisition prices and following costs such as doctor visits and laboratories the payer may achieve substantial cost savings and greater effectiveness by using rosuvastatin or simvastatin instead of these agents in Turkey. Therefore, simvastatin and rosuvastatin comprise of the optimal two statin formulary. Formulary desicion based on these results should be revisited periodically, as new pricing, outcomes and safety data become available.

PCV74

COST-EFFECTIVENESS OF STATIN THERAPY FOR THE PRIMARY PREVENTION OF CARDIOVASCULAR EVENTS PREDICTED BY THE REYNOLDS RISK SCORE IN HEALTHY MEN AND WOMEN AGED 40 TO 80 YEARS OF AGE

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OBJECTIVES: To evaluate the cost-effectiveness of treating patients without traditional risk factors for cardiovascular disease with statins. **METHODS:** Cost-effectiveness was evaluated using a backward induction model. A hypothetical cohort of men and women aged 40 to 80 years was evaluated for their first acute myocardial infarction (AMI) or cardiovascular accident (CVA). The Reynolds Risk Score (RRS) was used to generate event risks and risk reductions as the impact of therapy on lipids and c-reactive protein (CRP) could be calculated independently. Covariates for the RRS were adapted from the JUPITER trial and national health statistics. Life expectancies, quality of life adjustments, and event costs for AMI and CVA were ascertained from the primary literature. Direct and indirect treatment costs were based on the primary literature, Adult Treatment Panel III (ATPII) protocols and the Bureau of Labor Statistics. Medication costs were adapted from the Federal Supply Schedule. Costs were inflated to 2009 US$ using the medical component of the CPI and discounted at a rate of 3%. A sensitivity analysis was also performed. **RESULTS:** Using a threshold of $150,000 per QALY, treatment was cost-effective with generic statins in all men and women, aged 40 to 80 years when both CRP and LDL levels were affected. It was cost-effective to treat men >60 years with a hypothetical medication that only affected CRP levels. In the base case (65 year old men/women), the model was sensitive to adherence, smoking status (women), premature family history of AMI, brand rosuvastatin price, and the level of LDL reduction. **CONCLUSIONS:** In this population, it is cost-effective to treat all patients for the primary prevention of AMI and CVA with a generic statin that confers therapeutic benefits similar to what was modeled in this study. Selectively lowering CRP levels is only cost-effective in males >60 years.

PCV75

ROBUST UNIVARIATE AND MULTIVARIATE SENSITIVITY ANALYSIS CONFIRM THAT ENOXAPARIN IS COST-SAVING TO THE PAYERS COMPARED WITH UFH FOR VTE PREVENTION IN PATIENTS WITH ISCHEMIC STROKE: ANALYSIS OF THE PREVAIL DATA

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OBJECTIVES: A decision-analytic model using cost data and clinical information from the PREVAIL study showed that enoxaparin was cost-saving from the payer perspective compared with unfractionated heparin (UFH) for the prevention of venous thromboembolism (VTE) in patients with acute ischemic stroke (overall costs of clinical events plus drug costs: $2018 vs. $2913, respectively; difference $895 per patient). To test the robustness of the cost difference of enoxaparin versus UFH for VTE prevention after an acute ischemic stroke, univariate and multivariate sensitivity analyses were performed. **METHODS:** In the univariate analysis, the payer cost (2007$) for each clinical event (deep-vein thrombosis [DVT], pulmonary embolism [PE]; intracranial hemorrhage [ICH], major extracranial hemorrhage [MjEH] and minor extracranial hemorrhage [MnEH]) was adjusted individually, increasing or decreasing by 20%, while other parameters (drug costs, event rates) remained unchanged. The multivariate analysis was a Monte Carlo simulation (Crystal Ball software), where all the parameters were simultaneously varied in a random fashion within a range of ± 20% over 10,000 trials. **RESULTS:** The cost of DVT was $13,499. When increased by 20% to $16,199, the difference between UFH and enoxaparin groups was $1,104; when decreased by 20% to $10,799, the difference was $686. The baseline costs were $20,635 for PE, $26,037 for ICH, $22,765 for MjEH and $815 for MnEH. When these were increased by 20%, the difference between enoxaparin and UFH groups was $928, $907, $859 and $896, respectively. When decreased by 20%, the difference was $862, $883, $932 and $894. Using the Monte Carlo simulation multivariate analysis, the difference varied between $615 and $1,177, with mean (SD) $896 ($91) and median of $897. Enoxaparin was less costly than UFH across all analyses, with DVT being the main cost driver. **CONCLUSIONS:** Univariate and multivariate sensitivity analysis confirmed that enoxaparin is more cost-saving than UFH for VTE prevention after an acute ischemic stroke.

PCV76

SYSTEMATIC REVIEW OF ECONOMIC EVALUATIONS OF SELECTED CARDIAC IMAGING TECHNOLOGIES IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE

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OBJECTIVES: To identify, retrieve, and summarize studies evaluating the cost-effectiveness of selected cardiac imaging tests for the diagnosis of CAD. **METHODS:**